

CHANGE

**U.S. DEPARTMENT OF
TRANSPORTATION**
FEDERAL AVIATION ADMINISTRATION
National Policy

8110.4C CHG 2

Effective Date:
08/14/08

SUBJ: Type Certification

1. Purpose. This change transmits revised pages to Order 8110.4C, *Type Certification*. This change is issued to clarify policy found in chapter 6, paragraph 6-6, Type Certification of Surplus Military Aircraft, 14 CFR § 21.27.

2. Who this change affects. Branch levels of the regional aircraft certification directorates and all aircraft certification field offices.

3. Effective Date. The provisions of this change for this directive become effective on the date of signature.

4. Disposition of Transmittal. Retain this transmittal sheet until the directive is canceled by a new directive.

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/S/

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NOTE: For military surplus aircraft, the fatigue and load assessment can be based on a comparison of the special-purpose, mission operating environment with the aircraft's previous military operating environment. Nevertheless, the applicant must still comply with any other requirements necessary to ensure it is safe for its intended use.

e. Level of Safety. The level of safety for restricted category aircraft can be lower than the level for a standard category aircraft. However, to maintain an equivalent level of safety for the public, the FAA imposes certain operating restrictions (see 14 CFR § 91.313). This policy is not intended to eliminate any type certification procedural requirements, such as the need to address continued airworthiness.

f. Noise Compliance. Restricted category aircraft must comply with the applicable noise requirements of 14 CFR part 36 (see chapter 7, Noise Certification, of this order for more guidance).

g. Coordination with AIR-110. Coordinate all military-derived, restricted category, aircraft certification projects with AIR-110. This coordination is in addition to any other coordination and review activity with ACOs and directorates. Provide a copy of CPNs to AIR-110. Also, coordinate all issue papers and TCDSs with AIR-110 before issuing them.

h. Refer to Order 8110.56, for additional policy regarding restricted category type certification.

6-3. TYPE CERTIFICATION OF CIVIL-DERIVED AIRCRAFT (RESTRICTED CATEGORY), 14 CFR § 21.25(a)(1). [RESERVED]

6-4. TYPE CERTIFICATION OF MILITARY-DERIVED AIRCRAFT (RESTRICTED CATEGORY), 14 CFR § 21.25(a)(2). [RESERVED]

6-5. ESTABLISHING NEW RESTRICTED CATEGORY SPECIAL PURPOSES, 14 CFR § 21.25(b)(7). Under 14 CFR § 21.25(b)(7), AIR-100 may specify, on the Administrator's behalf, other special-purpose operations not listed in 14 CFR § 21.25(b)(1) through (6). For consideration of a new special purpose under 14 CFR § 21.25(b)(7), the applicant submits to the ACO a proposal, containing information, views, and arguments to support the new special purpose. The ACO then includes its comments and arguments, and sends the proposal to AIR-100, which:

- a. Evaluates the proposal,
- b. Solicits comments through publication in the Federal Register,
- c. Makes a determination, and
- d. Notifies the ACO and the accountable directorate of the results.

NOTE: For a list of approved special-purpose operations, see FAA Order 8110.56 or contact AIR-110.

6-6. TYPE CERTIFICATION OF SURPLUS MILITARY AIRCRAFT, 14 CFR § 21.27. Aircraft designed and constructed in the United States, accepted for operational use, and declared

surplus by an Armed Force of the United States may receive type certification in normal, utility, acrobatic, commuter, or transport categories.

a. Compliance, 14 CFR § 21.27(a). The applicant must show compliance with the following requirements:

- (1) Civil Air Regulations or the 14 CFR regulations in effect when the aircraft was accepted for operational use by the United States Armed Forces,
- (2) Applicable retroactive requirements of 14 CFR § 23.2, 25.2, 27.2, 29.2, and
- (3) Fuel venting, emissions, and noise requirements of 14 CFR parts 34 and 36.

b. Compliance, 14 CFR § 21.27(b). Some surplus military aircraft have FAA type certificated civil counterparts. These aircraft may be listed on the civil TCDS with information about modifications required to make them eligible under the civil type certificate. Modifications may include the removal of equipment as well. The applicant must show compliance with the following requirements:

- (1) Regulations governing the original civil aircraft TC,
- (2) Applicable retroactive requirements of 14 CFR § 23.2, 25.2, 27.2, 29.2,
- (3) Fuel venting, emissions, and noise requirements of 14 CFR part 34 and part 36, and
- (4) Address service difficulties and potential unsafe conditions, while showing compliance to any applicable FAA Airworthiness Directives issued against the civilian type certificate.

c. Engine, Propellers, and Related Accessories Approval, 14 CFR § 21.27(c). Engines, propellers, and their related accessories will be approved for use on these aircraft if the applicant shows the product provides substantially the same level of airworthiness as would be provided by the appropriate sections of 14 CFR parts 33 and 35. The applicant shows this on the basis of the product's military qualification, acceptance, and service record. Engines and propellers that have an FAA type certificated civilian counterpart and are installed on surplus Armed Forces aircraft will be approved for use on these aircraft if the applicant shows compliance with regulations governing their original civil type certificates. In this case the applicant must address all service difficulties and potential unsafe conditions, while showing compliance to FAA airworthiness directives issued against the civilian type certificate. The applicant must also ensure the engine, propeller, and related accessory has been properly maintained.

d. Alternate Path to Compliance, 14 CFR § 21.27(d). The FAA may relieve the applicant of strict compliance to certain airworthiness regulations (Civil Airworthiness Regulations/14 CFR) under 14 CFR § 21.27(d) if applicant can show that strict compliance with those airworthiness regulations would impose a severe burden and the method of compliance proposed provides substantially the same level of airworthiness.

- (1) *Severe burden* is regarded as proof by the applicant that any extensive modification(s) required by the applicable airworthiness regulation is shown not to be

commensurate with the relatively small increase in safety achieved by compliance and critical to the viability of the program. Severe burden must be keyed to specific provisions of the airworthiness regulations.

(2) When applying ‘substantially the same level of airworthiness’ in accordance with 14 CFR § 21.27(d) the applicant must show compliance to individual airworthiness regulations. However, the applicant may use satisfactory Armed Forces service experience as a method of compliance. The Armed Forces service experience must be in a format acceptable to the FAA. This method is allowed only when the applicant makes a case for severe burden when applying strict compliance to the regulations. The intent is to meet all the applicable regulations and show that no feature or characteristic makes the aircraft unsafe for the category in which certification is requested. Satisfactory Armed Forces service experience under 14 CFR § 21.27(d) may consist of, but not limited to:

- (a) Data on systems/component failures – Reliability data
- (b) Major repairs/alterations
- (c) Maintenance and overhaul findings
- (d) In-service Flight Data (Usage, altitude, airspeeds, vertical acceleration exceedances, etc.)
- (e) Present service history in context of the operating environments (military vs. proposed civilian)
- (f) Safety Data (Incident & Accident Data)

(3) Substantially the same level of airworthiness is not the same as equivalent level of safety. It involves a reduced effort than finding an equivalent level of safety. A level of airworthiness is established when an applicant shows and the FAA finds that an aircraft is in compliance with applicable airworthiness regulations and that no feature or characteristic makes it unsafe for the category in which certification is requested. The airworthiness regulations are minimum safety standards established by the FAA. 14 CFR § 21.27 (d) provides the applicant relief from strict compliance to an applicable airworthiness regulation, however the applicant must show that substantially the same level of airworthiness is achieved. This level can be achieved by providing applicable data such as the items noted above in paragraph 6-6(e)(2) a-f.

e. Special Conditions 14 CFR § 21.27(e). Special conditions and later requirements may be imposed under 14 CFR § 21.27(e).

f. Substantiation Package. The following are a list of items in the substantiation package provided by the applicant to the FAA:

- (1) A comparison of relevant military standards and specifications used in original military certification to applicable civilian regulations, and/or
- (2) The design philosophy used in military certification and comparison to any existing civil aircraft systems and design, and/or

(3) Any relevant analysis and testing conducted during military certification, and/or

(4) A differences document comparing the proposed civilian aircraft, engine, and propeller to the military version. This is necessary to document any design changes incorporated for civilian use, so that the validity of any military service history submitted can be confirmed. Any design changes made for civilian use purposes may be held to more recent certification requirements, and/or

(5) Any other relevant data items applicant finds necessary to help FAA provide finding for substantially the same level of airworthiness.

g. Other Considerations. Clarification on a few items:

(1) DoD category “B” aircraft as defined by DoD 4160.21-M, Defense Materiel Disposition Manual, are not eligible for 14 CFR § 21.27 type certification.

(2) Issues to be handled through the issue paper process. Final decision is with appropriate Directorate.

h. Import of Foreign Owned Aircraft. Surplus aircraft of a foreign military or government entity are not eligible, unless the U.S. designed and built aircraft was brought into the U.S. Armed Forces inventory, operated and maintained after its foreign service, and subsequently deemed surplus.

6-7. MULTIPLE AIRWORTHINESS CERTIFICATION, 14 CFR § 21.187. Aircraft can be certificated in multiple categories under 14 CFR § 21.187. See Order 8110.56 and Order 8130.2 for details.

6-8. AERIAL DISPENSING OF LIQUIDS.

a. When approving firefighting aircraft, indicate on the TCDS or STC that the approval is for “aerial dispensing of liquids.” Do NOT use terms such as “firefighting” as the mission or purpose. (For restricted category aircraft, the “aerial dispensing of liquids” mission is approved under the special purpose of forest and wildlife conservation.) The use of the term “aerial dispensing of liquids” is intended to avoid confusion over who approves firefighting operations. The U.S. Forest Service, Bureau of Land Management, and state forestry agencies approve firefighting operations. Each has the final responsibility for its own firefighting operations. The FAA approves the aircraft only for the dispensing function. The aircraft must be evaluated in its mission operating environment to ensure that “no feature or characteristic makes it unsafe.”

b. FAA can accept applications for TC and STC projects for aircraft to be converted for air tanker operations under “aerial dispensing of liquids.” All type certification projects for aerial dispensing of liquids should be considered as significant in accordance with this order and in coordination with the accountable directorate.

c. The FAA should not spend the resources to approve additional requirements the U.S. Forest Service, or other government agencies, impose on aircraft performing firefighting. This includes the determination of aircraft life limits, such as an operational service life (OSL), when the FAA does not have a requirement to establish one.

d. Coordinate all “aerial dispensing of liquids” certification projects with AIR-110. This includes providing a copy of the CPN, and coordinating issue papers, TCDSs, and STCs, as appropriate, before their issuance.